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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,475	06/27/2001	Lynn Bich-Quy Le	8032987/JAS	5940

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EXAMINER

NGUYEN, HANH N

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 09/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/894,475	<b>Applicant(s)</b> LE ET AL.	
	<b>Examiner</b> Nguyen N Hanh	<b>Art Unit</b> 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Remarks***

1. In view of an Affidavit under Rule 1.131, the Examiner withdraws the rejection to claims 1-20 under 35 U.S.C 102 (e) based on Miura (US Patent No. 6,343,877).

### ***Drawings***

2. Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. It is noted that paragraphs 0021 and 0022 (page 5 and 6) described the prior art motor with drawbacks to be resolved. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5-8, 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear about the limitation "the groove is cut into the radially outer surface of the sleeve arm in a region approximately parallel to or near to the gap between the counter plate and the thrust plate" as in claim 5. Moreover, claims 5-8 depend on claim 1, however, "the groove on the radially outer surface of the sleeve" is not supported by "the grooved region radially aligned with and adjacent the counter plate" as recited in claim 1. Similarly, "the groove" in claims 15

and 16 is not supported by "the groove" in claim 1. In view of the specification, the Examiner interprets the limitations of claims 5-8, 15 and 16 belongs to different embodiments and should be written in independent claims.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-4, 11-14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pool et al. in view of Teshima et al.

Regarding claim 1, Pool et al. disclosed a spindle motor for use in a disk drive comprising a shaft (10 in Fig. 1b) supporting a thrust plate (80) at one end thereof, a sleeve (15) surrounding the shaft, and rotatable relative to the shaft and supporting a hub (12 in Fig. 3c) on the outer surface thereof, the sleeve having a surface adjacent

the thrust plate (Fig. 2) and cooperating with the shaft to define a journal bearing and with the thrust plate to define a first fluid dynamic thrust bearing, a counterplate (19) welded to an upraised axial shoulder of the sleeve (Col. 4, lines 37-45) and having a surface located adjacent a surface of the thrust plate to define at least a second fluid dynamic thrust bearing, fluid within the first and second thrust bearings and the journal bearing supporting relative rotation of shaft and sleeve. Pool et al. fail to show a grooved region defined in the shoulder of the sleeve radially aligned with and adjacent the counter plate, and extending at or near the centerline of the counter plate.

However, Teshima et al. disclose a spindle motor wherein the rotor hub (2 in Fig. 4) is welded to the shaft with a grooved region defined on the hub and extending near the center line of the hub for the purpose of forming a weld relief.

Since Pool et al. and Teshima et al. are in the same field of endeavor, the purpose disclosed by Teshima et al. would have been recognized in the pertinent art of Pool et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Pool et al. by forming a grooved region defined in the shoulder of the sleeve radially aligned with and adjacent the counter plate, and extending at or near the centerline of the counter plate as taught by Teshima et al. for the purpose of forming a weld relief.

Regarding claim 12, it is noted that all limitations of the claimed invention have been fulfilled by Pool et al. and Teshima et al. as in claim 1.

Regarding claims 2 and 13, Teshima et al. also show a spindle motor (or a bearing) wherein a grooved region extends at least part way axially into the radially inner portion of the hub (Fig. 4)

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Pool et al. by forming a grooved region extends at least part way axially into the radially inner portion of the sleeve shoulder (or sleeve arm) as taught by Teshima et al. for the purpose of forming a weld relief.

Regarding claims 3 and 14, Teshima et al. also show a spindle motor (or a bearing) wherein the groove additionally extends into the radially outer surface of the shaft (Fig. 2).

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Pool et al. by forming a groove additionally extends into the radially outer surface of the counter plate as taught by Teshima et al. for the purpose of forming a weld relief.

Regarding claim 4, Teshima et al. also show a spindle motor wherein the grooved region extends to about half the axial extend of the hub.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Pool et al. by forming the grooved region extends to about half the axial extend of the counter plate for the purpose of forming a weld relief.

Regarding claims 11 and 19, Teshima et al. also show a spindle motor wherein the radially outer wall of the groove is tapered toward the radially outer wall of the hub.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Pool et al. by forming the groove wherein the outer wall is tapered toward the radially outer wall of the shoulder.

5. Claims 9,10,17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pool et al. in view of Teshima et al. and further in view of Heine et al.

Regarding claims 9 and 17, Pool et al. and Teshima et al. disclose the invention except showing the spindle motor (or the bearing) wherein the groove extends radially away from the counterplate into the sleeve, and extends from a point near to the junction between the radial and axial walls of the sleeve wall approximately part way toward the upper axial surface of the arm.

However, Heine et al. disclose a fluid dynamic bearing wherein the groove (recess 104) extends radially away from the counterplate into the sleeve, and extends from a point near to the junction between the radial and axial walls of the sleeve wall approximately part way toward the upper axial surface of the arm for the purpose of facilitating the insertion of the counter plate.

Since Pool et al., Teshima et al. and Heine et al. are in the same field of endeavor, the purpose disclosed by Heine et al. would have been recognized in the pertinent art of Pool et al. and Teshima et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Pool et al. and Teshima et al. by forming a fluid dynamic bearing wherein the groove extends radially away from the counterplate into the sleeve, and extends from a point near to the junction between the radial and

axial walls of the sleeve wall approximately part way toward the upper axial surface of the arm as taught by Heine et al. for the purpose of facilitating the insertion of the counter plate.

Regarding claims 10 and 18, Heine et al. also show a bearing as wherein the groove is about half the axial width of the sleeve arm and about half the axial extent of the counterplate.

6. Claim 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pool et al. in view of Heine et al.

Regarding claim 20, Pool et al. disclose a fluid dynamic bearing comprising a shaft (10 in Fig. 1b) supporting a thrust plate (80) at one end thereof, a sleeve (15) surrounding the shaft, and rotatable relative to the shaft and supporting a hub (12 in Fig. 3c) on the outer surface thereof, the sleeve having a surface adjacent the thrust plate (Fig. 2) and cooperating with the shaft to define a journal bearing and with the thrust plate to define a first fluid dynamic thrust bearing, a counterplate (19) welded to an upraised axial shoulder of the sleeve and having a surface located adjacent a surface of the thrust plate to define at least a second fluid dynamic thrust bearing, fluid within the first and second thrust bearings and the journal bearing supporting relative rotation of shaft and sleeve. Pool et al. fail to show means defined in the upraised axial shoulder for weakening the radial stiffness of the wall.

However, Heine et al. disclose a fluid dynamic bearing wherein means (recess 104 in Fig. 3) are defined in the upraised axial shoulder for weakening the radial stiffness of the wall for the purpose of facilitating the insertion of the counter plate.



Since Pool et al. and Heine et al. are in the same field of endeavor, the purpose disclosed by Heine et al. would have been recognized in the pertinent art of Pool et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Pool et al. by forming a fluid dynamic bearing wherein means defined in the upraised axial shoulder for weakening the radial stiffness of the wall as taught by Heine et al. for the purpose of facilitating the insertion of the counter plate.

### **Conclusion**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (703) 305-3466. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

HNN

Sept 10, 2003

PRIMARY EXAMINER  
KARL TAMAI

